Proposed Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling

Board Hearing

Sacramento, California

July 22, 2004

AIR RESOURCES BOARD

California Environmental Protection Agency

Overview

- Background
- Existing Regulations
- Proposed ATCM
- Environmental and Economic Impacts
- Proposed Modifications to Staff Proposal
- Future Activities

Background

What is Idling?

- General idling
  - Essential
  - Non-essential
- Main engine idling during rest periods (Sleepers)
  - Compliance with federally mandated rest requirements

What vehicles are affected?

- Diesel-powered commercial vehicles with GVWR > 10,000 lbs.
  - Delivery trucks
  - Long haul trucks
  - Other commercial vehicles
- Buses

Estimated Idling Emissions in California

- 409,000 heavy-duty vehicles operating daily in State
- 2005 idling emissions, tons per year

	Diesel PM	NOx	CO	CO2
Non-Essential	208	6,600	3,650	432,000
Sleeper	230	13,700	7,500	758,900
Total	438	20,300	11,150	1,190,900

Why Control Idling?

- Many engines operate in urban locations
- Large reductions in toxic, criteria, and greenhouse gas emissions possible
- Significant reduction in exposure to toxic airborne contaminants
- Cost-effective
- Saves fuel

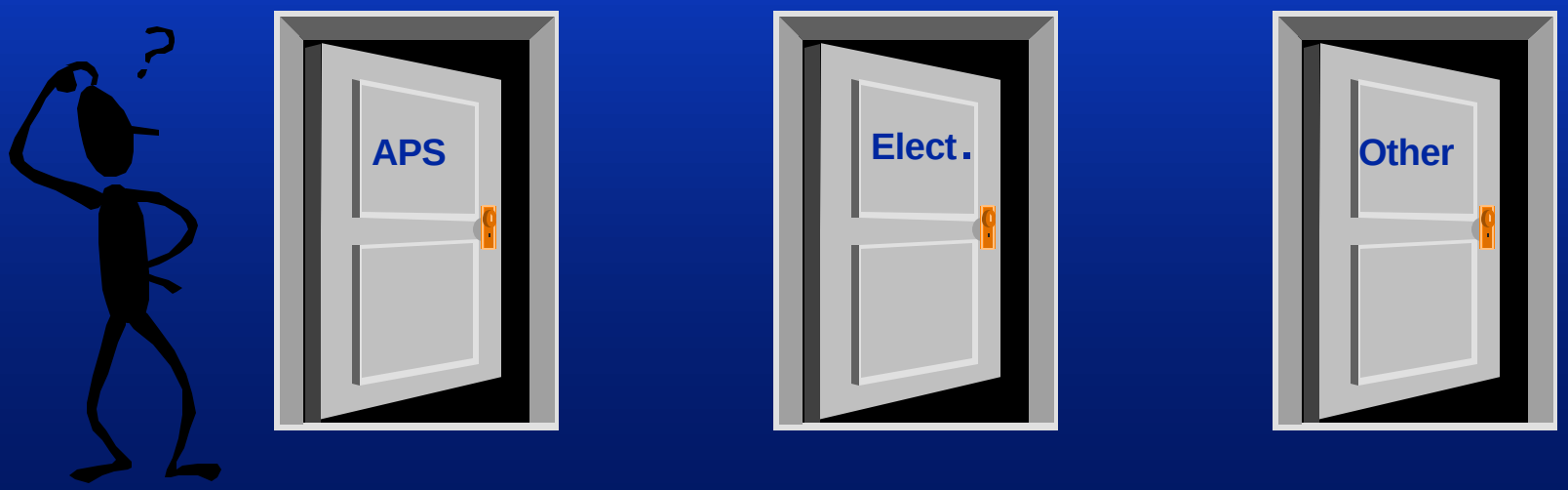
Sleepers

- Main engine idled to provide comfort and electricity
- Federal law requires 8 hours of rest for every 10 hours of driving
- Alternatives to idling main engine exist

Alternatives

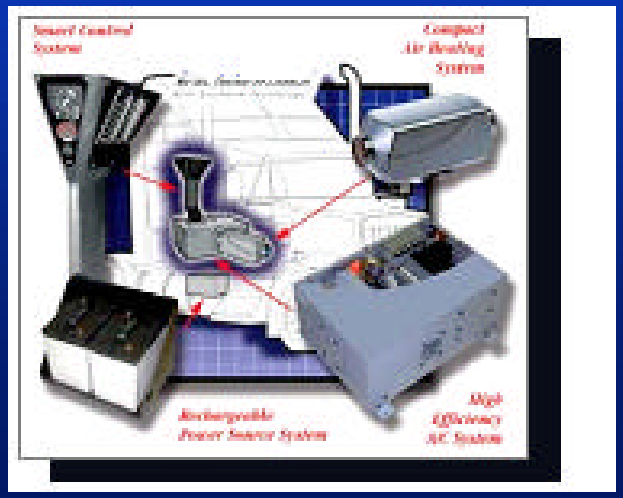
Alternatives to main engine idling during rest periods

- **Auxiliary power system (APS)**
  - Non-combustion (batteries, fuel cells)
  - Internal combustion engine
- **Truck stop electrification**
  - On-board
  - Off-board



Auxiliary Power System - APS

- Internal combustion (IC) engine or battery powered
- $3,000 - $10,000 for equipment and installation
- Most systems are self contained and require no infrastructure development



Truck Electrification - Off Board

- Requires infrastructure deployment
- Currently, 6 truck stops with ~400 spaces equipped in California
- ~$10,000 cost per space
- Can be operated on most trucks with customized window templates
- $1.25 basic hourly charge for truck operator

Truck Electrification - On Board

- Requires infrastructure deployment
- ~$3,500 cost per space infrastructure
- Up to $3,500 per truck for HVAC system, inverter / charger and installation
- Cost expected to be significantly less than idling of main engine

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Existing Regulations

Nationwide

- 20 states have statewide, county or city-wide idling limiting ordinances or regulations
- Eight states have statewide idle limiting regulations
- Twelve states have local restrictions
- Idle limit of 5 minutes is typical

Existing Regulations Cont'd

California

- **School Bus Idling ATCM**
  - approved by the Board December 2002
  - status report to Board in October 2004
- **Placer County Ordinance**
  - approved November 2003
  - idling limit of 5 minutes per location
  - applies to diesel powered trucks > 26,000 GVWR and to off-road diesel powered equipment > 70 hp
- **Idling at Ports (AB2650)**
  - effective July 1, 2003
  - limits idling at ports, including time spent in queue

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Development of ATCM

- **Surveys**
  - Public agencies in California
  - Private companies in California
  - Nationwide - state agencies
- **Consultations**
  - Industry
  - Enforcement Agencies
  - Others
- **5 Public Meetings**
  - Between December 2003 and May 2004

Applicability

- All commercial on-road diesel-fueled vehicles operating in California with GVWR > 10,000 pounds

- Applies to out-of-state and out-of-country registered vehicles when operating in California

Requirements

- Limit the primary engine idle time to five (5) minutes at any location
- Manually shut-off engine
- Targets non-essential idling
- Sleepers in residential areas
- Buses
  - Allowed 10 minutes prior to passenger boarding
  - No limit when passengers onboard
- Effective upon approval by OAL

Exceptions

- Adverse weather conditions or mechanical difficulties
- Direction of a peace officer
- Safety and equipment inspection
- Mandatory for servicing, repairs or diagnostic purposes
- Queuing in the normal course of conducting business
- Power source for mechanical operations


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Requirements (Cont'd)

Sleepers / APS

- The proposed ATCM contains requirements for sleeper and APS units effective January 1, 2009
- Would apply to:
  - primary engine
  - diesel-fueled APS

Considerations

- Insufficient parking facilities to meet demand
  - ~ 10,000 spaces available at truck stops and rest areas
  - ~ 20,000 parking spaces needed during peak rest hours

- APS diesel engine -vs.- new (2007) on-road engine emissions
  - APS emits as much as 5 times more PM than 2007 or newer on-road engine
  - Need for further evaluation of NOx impacts
  - ARB Staff to address in future rulemaking

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Expected Emission Reductions

Non-Essential Idling

- 166 tons diesel PM (~80%)
- 5,200 tons NOx (~80%)

Health Benefits

- Exposure and associated risk to all receptors reduced
- Toxic, criteria, and greenhouse gas emissions

Neighborhood Benefits

Significant emission and health risk reductions are expected to occur in neighborhoods surrounding areas where activity is concentrated such as rest stops and distribution facilities.

The proposed ATCM is consistent with the Board's Environmental Justice efforts

Economic Impact

- Average fuel savings per vehicle of 130 gallons / year
- Maintenance savings per vehicle of $10- $40 per year
- Total annual savings of $90 -$100 million
- Total annual fuel savings average 50 million gallons / year

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Proposed Modifications to Staff Proposal

- **Delay the consideration of provisions related to sleeper and APS units**

- **Staff will return to the Board with a comprehensive proposal to address sleeper and APS unit idling requirements**
  - **Acceptable emission standards for APS units**
  - **Appropriate main engine idling limits**
  - **Establish effective date for limitations on idling for sleeper units**

Proposed Modifications to Staff Proposal Cont'd

- **Clarify the 5 minute idling restriction does not apply during positioning of a crane**
- **Clarify that the proposed ATCM applies to military vehicles and transit, tour and commercial buses (e.g. Greyhound)**
- **Clarify that the proposed ATCM applies to in-state, out-of-state, and out-of-country vehicles while in California**

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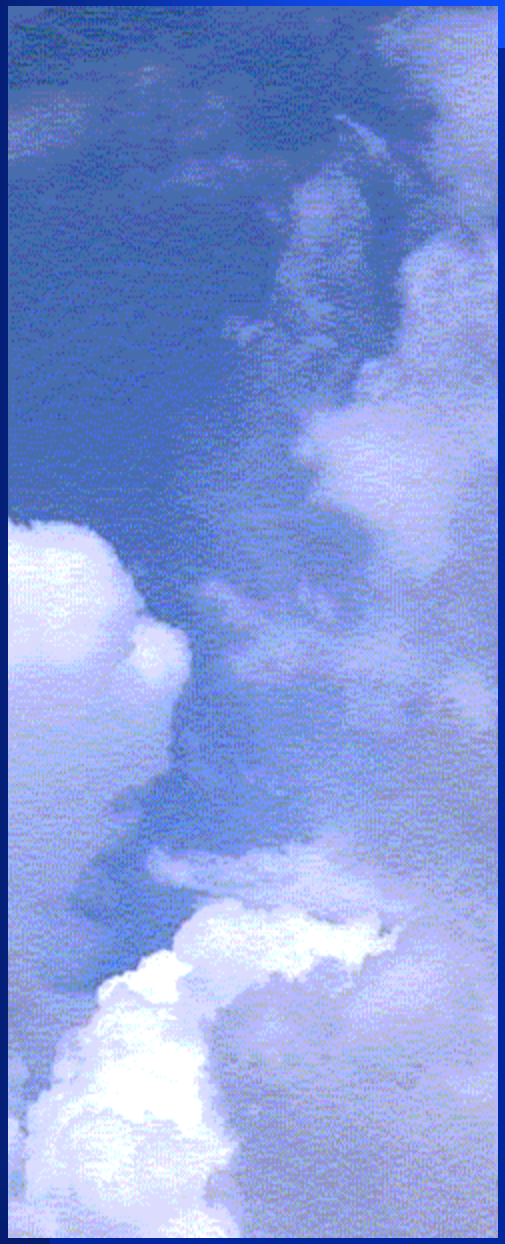
Next Steps

- Provide outreach and educational materials
- Use the existing 1-800 END-SMOG telephone complaint line to receive complaints of non-compliance with the proposed ATCM
- As the primary enforcement agency, coordinate enforcement efforts with CHP, local peace officers and air pollution control and air quality management district personnel



Recommendation

- Approve the ATCM to Limit Idling of Diesel-Fueled Commercial Motor Vehicles with Proposed Changes